

# AVIATION

*The Oldest American Aeronautical Magazine*

SEPTEMBER 21, 1925

Issued Weekly

PRICE 10 CENTS



Vought seaplane from the U.S.S. Colorado over Sydney Australia

Photo Underwood & Underwood

VOLUME  
XIX

## SPECIAL FEATURES

NUMBER  
12

PN9 REACHES HAWAII  
BRITISH SCHNEIDER CUP ENTRY  
ADMIRAL MOFFETT DEFENDS NAVY  
THE STRENGTH OF THE SHENANDOAH

GARDNER PUBLISHING CO., Inc.  
HIGHLAND, N. Y.  
225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 23, 1920, at the Post Office at Highland, N. Y.  
under Act of March 3, 1879.

# AIRCRAFT YEAR BOOK

## 1925

(Seventh of the Series)

### Story of World Aviation up to the Minute

300 Pages Text - 60 Pages Illustrations - 50 Pages Designs

Interesting facts and figures will be found in the Aircraft Year Book on—The Air Mail—Commercial Air Transport—Foreign Aeronautics—American Airships—Air and the Law—Technical Progress—World Records—Chronology of Aeronautical Events—Crop Dusting—Aerial Survey—Forest Patrol, and much other important information and statistics.

THE AIRCRAFT YEAR BOOKS ARE INDISPENSABLE FOR REFERENCE

PUBLISHED BY  
AERONAUTICAL CHAMBER OF COMMERCE OF AMERICA, INC.

There are a few remaining copies of five editions of the Aircraft Year Book (1919-1920-1921-1922-1924) which will be furnished with orders for the current issue at \$1.25 per volume, or \$4.00 for the five volumes, postpaid.

THE GARDNER PUBLISHING CO.  
225 Fourth Ave.,  
New York

Please find enclosed \$5.25 (money order, check, currency) for which please send postpaid, one copy of the AIRCRAFT YEAR BOOK 1925.  
If all six issues are desired remit \$13.25.

Name .....

Address .....

SEPTEMBER 21, 1925

# AVIATION

VOL. XIX, NO. 12

Published every Monday

## CONTENTS

Editorials .....	245	The Boeing F10 .....	257
Why the Shenandoah Failed .....	246	British Schneider Cup Entry .....	258
PNR No. 1 Found On Havana Roads .....	249	Match Field Race Notes .....	263
Admiral Moffet Replies to Accusations .....	253	Argents and Airways .....	268
President Coolidge Approves Air Board .....	254	United States Air Forces .....	268
Community Aviation .....	256	Publisher's News Letter .....	271

GARDNER PUBLISHING COMPANY, Inc., Publishers  
GENERAL AND EDITORIAL ROOMS: 225 FOURTH AVENUE, NEW YORK  
CABLE ADDRESS: AERODIG  
Publication Office  
HIGHLAND, N. Y.

Subscription price: Four dollars per year. Canada, five dollars. Foreign, six dollars. Single copies ten cents. Back numbers 25 cents. Copyright 1925, by the Gardner Publishing Company.

Entered every Monday. Forms close ten days previously. Entered as second-class matter Nov. 10, 1910, at the Post Office at Highland, N. Y., under act of March 3, 1879.



## AVIATION MAGNETO

Contractors to U. S. Navy

## Scintilla Magneto Company

Factory and Offices at Sidney, New York

Descriptive Booklet upon request



## Why the Shenandoah Failed

Possible Technical Reasons for Destruction by Elements  
Given by Her Designers

**"The design of a rigid airship is the boldest and most daring engineering adventure man has ever attempted."**

This is the conclusion that was reached by the designers of the Shenandoah in a paper submitted to the *Fourth Aeronautical Society* in June 1922. Commander J. G. Brainerd, U. S. N., C. F. Bumpen and B. Tinscott prepared a study which they titled "The Strength of Rigid Airships," which has been published by the Society.

For 121 pages, the most intensive study of airship engineering to date and from those can be derived the reasons for the failure of the Shenandoah to meet the stress put to it by the storm over Ohio. As will be seen from the review of the technical paper given below the designers of the Shenandoah assert that it is fully for an airship to survive storm stress. The reducing stress "one and must be avoided."

The paper gives most interesting figures of the factors of safety under different conditions. In extreme case it is as low as 1.1. The force of winds or storm clouds "it seems entirely impossible to estimate should be considered a warning of danger that should be avoided." As no way should this knowledge or the statements made be considered a criticism of the magnitude of the airship. It merely shows that through the successful accomplishment of the ship, the one thought capable of doing that her designers had never seen dangerous, and calculated for the fact that no amount of such a violently designed construction should be relied upon to make. The union here has been to emphasize certain points and very not used by the writers. Whether the reports of the board of inquiry may be in this direction of the inherent weakness of airships should drive the designers of any lack of freedom as to the limitation of their structures—Bumpen.

The most important and most important part of the paper is the chapters on "Aerodynamic Forces due to Weather." It requires no comment.

"It is obvious that any airship has certain limitations upon its operation placed by wind and weather. Airships are subject to the position of the weather elements which is found to show down in a heavy manner to pressure her structural integrity. Consequently, a rigid airship being of great size and delicate construction should be operated with due consideration for the weather. The most efforts may be made to a high factor of safety as to the speed of the ship in reduced speed when it is not possible to do so. This has no effect in reducing the aerodynamic loads to which the ship may be subjected when turning and maneuvering, regardless of weather conditions."

### Complex Atmospheric Conditions

"An additional advantage in increasing full speed for their operation is to be found in relatively another air at such levels. The turbulence of air flowing over rough ground, which is felt as gustiness, is less likely to be met with in exact measurement or general definition. The airships at which the gusts are no longer felt directly upon the nature of the country and of the season of the year, but ordinarily about 1,000 ft. conditions are in the open field at the water, at a time of high pressure, gusts have been felt at altitudes above 1,000 ft. It was also concluded to use a strength reduction for the case of a ship running at full speed through a gusty surface wind."

"In addition to the general turbulence of the wind at ground level, there are to be expected large eddies caused by prominent obstructions, such as a hill or a cliff, and these eddies

may be felt at an altitude of from five to ten times the height of the obstruction. If the ship is restricted to full speed at a good altitude, the effect of such eddies is not of importance."

"Converse remarks due to unequal heating of air and ground give rise to vertical currents in the air which result in considerable turbulence. Professor Hargraves, on page 205 of his "Physics of the Air," states that pilot balloon measurements have shown vertical velocities of more than three miles per second, either up or down, under conditions not necessarily associated with the formation of clouds. This may be considered as an ordinary condition which the ship will encounter without warning when passing at full speed."

The most serious condition of vertical air velocity is to be met with in and around cumulus clouds. C. F. Bumpen, in the "Monthly Weather Review" for June 1922, describes a storm cloud by his of the vertical motion of cumulus tops, to which he gives vertical velocities of 3, 4 and 5 miles per second. Professor Hargraves, in his "Physics of the Air," page 165, estimates that it is not uncommon for the velocities that can often found in cumulus clouds, there must be an upward of air of the order of 5 to 10 miles per second.

### Violence of Cloud Winds

"From a ground survey of existing meteorological data, it seems clear that the winds inside a well-developed cumulus cloud are of great violence and present a real menace to an airship. In addition to the possible and probable vertical currents of more than 5 miles per second under the cloud, there may be a strong draught around the outside edges of the order of 1 to 2 miles per second due to cooling from evaporation in this region. The wind indicates that there are fairly narrow boundaries between air that is affected by the conditions existing in the cumulus cloud and relatively undisturbed air, and an airship passing into such a cloud will experience a sudden and violent blow. This blow is entirely impossible to calculate, and cumulus clouds should be considered a warning of danger and should be avoided."

"It is possible that a ship under certain atmospheric conditions may run into disturbed air, possibly contained by clouds, at the boundary between two strata of unequal temperature, and in this condition may encounter a peculiar wind structure. There is evidence from windward road formations of a relatively slow period of wind in such a "valley of discontinuity" similar to deep sea rollers. For possible values of velocity and density, numerical calculations indicate that the wind length should be long compared with the length of the ship. No attempt has been made by the authors to estimate the effect on the ship, but Capt. A. Henson, an experienced seaplane pilot, states that this condition is hazardous to him and that he has never caught anything of nature along it. The practice is to proceed at full speed through windward clouds."

"It seems reasonable to conclude that gusts, whirlwinds and other noise the ground surface may be considered in the design of the vessel except for the condition of handling on the ground and lying in the morning mist. The problem is quite simple in its simplicity to the solution of adequate ground tackle for mooring a vessel in an open field, at a distance when it is not of and put to sea to ride out the storm."

### Tornadoes Visible Ahead

"The existence of visible tornadoes of upward motion or whose tops at bases and phases are sharply separated from the surrounding atmosphere, must be taken account of in the design of the airship. The most critical of such currents, the

tornado, contains vertical velocity with rotation, but frequently can be seen from a great distance and can be avoided. The phenomenon which large fully developed smaller types is less conspicuous and avoidable. It would appear to be fully to enter such a cloud and subject the ship to the various dangers of wind, rain, hail and lightning during such upsurges and probably avoidable hazards as there, there remain, at flying heights, numerous currents with turbulent turbulence which the ship may run into full speed. There is ample evidence that upward velocities as high as three miles per second will be encountered."

"The calculation for the ship flying through still air with a pitch angle to obtain dynamic lift has been previously described. The same calculation should apply for the case of such vertical air currents, but considering that with a submerged hull by the time the ship cannot make full speed, while now to consider a ship at full speed running sideways into an up current of air it is calculated that when the lift is providing it is speed of 80 ft./sec. and suddenly runs into a gust flying the effect of 6 ft. per sec. at the nose, the greatest loading moment will be 314,000 meter pounds, which is the greatest loading moment found in our calculations."

### Impression of Experience

"In the end the design of a ship, to be strong enough to stand reasonably intelligent, briefing is reasonably comprehensive weather, must be based upon experience and common sense with many examples of successful and a few examples of unsuccessful practice. Down-pacing results are indicated in our sailing way with forms of safety (or experience) which do not require the estimation of the true force of storm winds."

With regard to the ship being overweighed it appears that the lift due to an overweighed in the storm clouds as well as seen from the following paragraph:

"Over estimates were well rather way it was found that

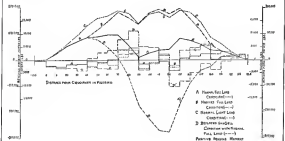
weight all of the ship was being made on the thicker side of the normal thickness and usually met under the maximum allowable thickness. This meant a substantial increase in the weight of the ship over estimates."

### Designers Know Weaknesses

When it is recalled that the Shenandoah broke at Frames 80 and 238 the curves of static stress and loading moments in the chart and the comment in the chapter on "Static Forces Affecting the Longitudinal Strength" an engineering proof that the designers knew the various weaknesses.

"On a sailing barge in static equilibrium in the atmosphere there are terrific inequalities in the longitudinal distribution of weight and buoyancy, producing what are usually estimated 'the primary static shearing forces and bending moments.' The computation of the distribution of the weight and buoyancy along the hull, and the resulting shearing forces and bending moments according to the well known methods of static architecture, present no difficulty, and the procedure to be followed in such computations calls for no explanation, except to note that the weight and buoyancy factors are most conveniently assumed to be concentrated at the main transverse frame, instead of distributed continuously along the hull. This assumption is justified because the buoyancy forces are carried to the main frame by the wing and the longitudinal girders, and the principal loads are thus carried to those frames by the wing and the hull and the sea surface."

"The designer endeavors to dispose the loads in the manner most suitable for the structure, it is to be an other consideration may permit, but it should be remembered that in a modern rigid airship the disposable and movable loads, such as the fuel, ballast, passengers and crew, constitute such a large proportion of the total weight of the airship that its proper distribution of these loads is of the highest importance in the design of the ship. It is the duty of the



Curves of Static Stress and Bending Moment for Airship ZRI. It will be noted that the greatest stress occurs in the vicinity of Frames 230 and 80 where the Shenandoah actually broke.







# President Coolidge Appoints Air Board

*Investigation of Aircraft Situation to Be Made by Independent Board*

President Coolidge announced on Sept. 12 that he had appointed a Commission including Major General James G. Harbord of New York, President of the Buick Corporation of America, to investigate the aircraft situation with a view to coordinating the best means of developing and applying aircraft in the national defense.

The President's action was based, according to the announcement, on a joint letter of today's date presented to him this afternoon by Charles D. Widener, Secretary of the Navy, and Dwight F. Davis, Acting Secretary of War, who recommended the inquiry. The course taken is a direct result of the Shenandoah tragedy and the charges made in the press by Colonel William Mitchell, of the army air service, of incompetency and negligence on both the army and navy air services.

## The President's Letter

The announcement was contained in a letter of President Coolidge to Secretary Widener and Acting Secretary Davis, made public at the White House.

His letter reads:

Your joint letter stating that "in the presence of existing a study of the best means of developing and applying aircraft in national defense and to implement the studies already made by the War and Navy Departments on that subject, we respectfully suggest that you as Commanders-in-Chief of both Army and Navy appoint a board to further study and advise on this subject," has just been received.

Your expression of one which already had my approval as far that last Spring I had conferred with parties as to the desirability of taking such action, so that a report might be laid before me for my information and also for the use of the Executive Congress.

I am therefore asking the following named gentlemen to meet me at the White House on Thursday next at 12 o'clock in the forenoon. I shall suggest to them that they organize by selecting their two chairmen and proceed immediately

to a consideration of the problems involved, so that they can report by the latter part of November.

Major Gen. James G. Harbord, retired, of New York City; Rear Admiral Frank F. Fletcher, retired, of Washington, D. C.; Dwight F. Davis, Major of Engineers, U. S. Army and banker, of Detroit; Howard B. Coffey, consulting engineer and expert in aerodynamics; Col. Thomas Douglas of New Haven, Conn., Senator, formerly in the air service and member of the Senate Committee on Military Affairs; Hon. Carl Vinson of Mississippi, Gov. of the House Committee on Naval Affairs; James A. Parker of Salem, N. Y., Chairman of the House Committee on Interstates and Foreign Commerce; Hon. Arthur C. Benson of Grand Rapids, Mich., Judge of the Sixth Circuit Court of Appeals; William F. Durand of Los Angeles, Calif., President of the Institute of Mechanical Engineering, member of the National Advisory Committee for Aeronautics.

The appointment of this board conforms to the proposal made by Acting Secretary of War Davis and brings the War and Navy Departments in harmony, so the necessity to study and coordinate aviation.

The inquiry undoubtedly will go into the charges made by Colonel Mitchell and study the whole aviation problem in a broad way in the light of the Shenandoah disaster. It is pointed out that the area named in the board consisting of former army and navy officers, engineers and makers of Congress, representing both parties, is of such a character as to be in public approval and place the inquiry above partisan grounds.

The feeling in Washington is that the investigation that this board will make of the report of President Coolidge will render unnecessary the proposed Congressional investigation. President Coolidge hopes to have the investigation in the board just appointed completed by late November, so that his report can be presented to Congress when it meets.

## Looning Amphibian for Langley Field

Shortly after one of the new Army Looning Amphibians was delivered by sea to Langley Field, Norfolk, Va., where it will be permanently stationed as part of the standard equipment of the Army Air Service at that field.

Lieut. George C. McDonald, of Langley Field, was sent to the Looning plant to take delivery of the plane. After only a few minutes' testing up of the engine, this brand new plane was launched in the water at the Looning airport, East River, and christened Amphibian, with Lieutenant McDonald as pilot and Oliver Looney as passenger, the plane took off for its first flight, fully loaded with 340 gal. of aviation.

As everything on the plane and its installation was found satisfactory in the air, Lieutenant McDonald and Looney decided to proceed at once to Langley Field, and this was the first flight of 324 as was made in 1 hr. 33 min., showing a cruising average of 180 m.p.h. at 1,600 r.p.m. of the inverted Liberty engine. The gas consumption on the way was approximately 25 m.p.h.

Upon arrival at Langley Field, Lieutenant McDonald passed the aircraft, taking advantage of the lowering of the landing gear and proceeded to land on the field, taking up to the ship, where the structure was ground with considerable vibrations, not only to the Langley Field personnel but also by a large number of Pennsylvania State National Guard troops who are in training there.

During the trip Lieutenant McDonald experimented with the "semi-inverted" "water" stability" of the Looning Amphibian and was able to fly, for fifteen minutes without touching the controls at all, during which time the plane deviated only slightly from a straight course in a long "S" and back longitudinal and lateral stability were shown to be perfect, in that no correction at all was necessary. This was found particularly interesting, as the air was quite hazy at the time and apparently indicates that the major revolutionary feature of the Looning Amphibian in turning the water of gravity at the center of lateral lift area, naturally works out in practice to give a remarkably accurate flying machine.

Representatives of the Army Air Service also expressed themselves as pleased that the initial test trip of this new airplane, upon delivery, was accomplished by a major cross-country type of long-range and is considered quite a credit to the mechanics of the Looning plant.

## Monsieur Flandin's Visit

M. Pierre-Etienne Flandin, president of the Aero Club of France, and a member of the Fourth Chamber of Deputies, will on his visit to the United States and Canada, on the liner "The Orizaba," leaving France on Sept. 19 and arriving in New York on Sept. 26 or 27. During his stay in the United States, M. Flandin plans to travel as far as New York and Sept. 30, proceeding thence to Washington on Oct. 1. On Oct. 7 it is planned to return to New York for the International Air Races, going on to Niagara on Oct. 10. M. Flandin hopes to spend at least one day in each of the following cities: Canada—Toronto, Ottawa, Montreal and Quebec. The French aviator will return to France aboard the St. Paul, leaving New York on Oct. 10. M. Flandin, it will be recalled, was formerly French Minister of Air and also Minister of Commerce in the French Government.

## Bequet Climbs with Various Engines

In addition to the actual horsepower of any given engine, every aviation engine (1000-2500) additional quality which can be reliably measured or described. This is the so-called "quality" which may make one particular engine superior to others of the same general characteristics and (1000-2500) power. The possession of this quality to a high degree in the new French engine (already holder of the World's Duration Record) is illustrated by the following official performance figures of the Bequet 50 equipped with the Vernois, Renault and Looney engines:

	Bequet	Renault	Looney
Climb to 10000 ft.	8 min. 33 sec.	10 min. 25 sec.	8 min. 55 sec.
Climb to 15000 ft.	16 min. 34 sec.	18 min. 25 sec.	16 min. 35 sec.
Climb to 20000 ft.	25 min. 10 sec.	27 min. 25 sec.	25 min. 15 sec.
Climb to 25000 ft.	35 min. 40 sec.	38 min. 25 sec.	35 min. 45 sec.
Climb to 30000 ft.	48 min. 15 sec.	50 min. 30 sec.	48 min. 20 sec.

During these tests the machine carried a useful load of 2200 lb.

## Italy Changes Air Attache

Wing Commander Mario Calabrese, Air Attache at the Italian Embassy at Washington, has been ordered to return to Italy, his place being taken by Commander Roberto Attico at the Embassy in London.

## MEMBERS OF THE PRESIDENT'S AIRCRAFT BOARD



Howard B. Coffey



Major General James G. Harbord



Rear Admiral Frank F. Fletcher  
Gen. James C. Harbord



Lieut. George C. McDonald  
Rear Admiral Frank F. Fletcher



Dwight F. Davis  
Rear Admiral Frank F. Fletcher



Thomas Douglas  
Rear Admiral Frank F. Fletcher





## British Schneider Cup Entry

Great Britain to be Represented in the Schneider Cup Race  
by the Supermarine Aviation Works

One of the British entries in the Schneider Cup Trophy to be held at Baltimore on Oct. 24, is according to news just received, to be a fast type seaplane designed and constructed by the Supermarine Aviation Works of Southampton, England. The pilot will be Capt. H. C. Burd who has been with the Supermarine Company for a number of years as chief pilot and it will be remembered that it was he who flew the Sea Lion, Britain's entry in the 1922 Schneider Cup Race, to victory at Naples, Italy, which resulted in the bringing of the Cup to England that year. Furthermore, it will be recalled that, on the occasion of the victory of the Great Britain Navy at Oporto in the 1923 race for this annual seaplane contest, Captain Burd put up a good performance against the Starling-Curtis, coming in third.

### To Arrive Shortly

Arrangements have now completed for the plane together with its designer, H. J. Mitchell, and Captain Burd, to travel to America on the S.S. *Manzanillo* arriving here during the first week of October, and it is known that the Supermarine company expects very excellent performance from their latest seaplane and it is hoped therefore that very few competitors will be set up in Baltimore.

### Supermarine History

A brief history of the activities of the Supermarine Aviation Company will not be out of place. Founded at Woolston, England, in 1915, the company commenced with the construction of several experimental hydroplanes, and, that year produced one of the first successful flying boats constructed in England. The hull of this boat was of circular construction which, at those early days represented a very novel feature. A great deal of experimental work was done during the following year and until the outbreak of the war when the British Government took over and extended the plant. A great deal of expert work was carried out and subsequently the Supermarine company commenced original design work in flying boats for the Royal Air Service.



Supermarine "Sea Eagle" (left) by Kelly-Boyer and on the air by British air force Schneider Cup entry in Cleveland, France.

On the cessation of war, the company turned its attention in part to the design of airplanes for commercial purposes and in 1918 designed and operated the "Clanra" type flying boat between Southampton and the Channel Islands. In dependence of that year the Supermarine successfully entered a flying boat in the Schneider Cup Race held at Bournemouth, England. As an example of the seaplane of the Channel type a number of designs were reported to Navy and later built by the Royal Navy. Naval Air Service, and also to private companies in Norway for the purpose of mail carrying.

In 1919 a commercial Amphibian flying boat, claimed to be the first such ever constructed was designed and ordered in the Air Ministry Comptroller for Commercial Aircraft, which was built at Portsmouth and Portsmouth and later was entered

a large prize on account of the reliability and excellent performance and smoothness. The complexity of the construction features was also mentioned. During the following year the company became interested in the design and construction of motor launchers and achieved considerable success in this line, all three seaplanes in commercial service as it was termed by the fact that during the same year the Supermarine Works turned its attention to the production of a flying boat especially designed for deck landing on ships at sea, and in 1920 tested out the Skoupi type deck landing flying boat which was constructed in order to large number in the Air Ministry.



E. A. Price. The Supermarine "Sea Scout" seaplane. It was built for the R.A.F. and has the Royal Navy engine.

Then came the production in July of 1923 of the single motor racing flying boat, the "Sea Lion" which scored first for the company on Aug. 10, 1923, in winning the International Schneider Cup Race and then bringing the Trophy from Italy to England only to be again removed and this time brought across the Atlantic by the United States Navy five in the following year. It is interesting to note that on the occasion of the 1923 contest in Italy the Supermarine Sea Lion recorded its longest all purpose records for flying boat and on a month the company was awarded the first official world records in this respect, granted by the F.A.I. for motor aircraft.

### Commercial Amphibians

The company has to its credit the production of several very interesting two engine flying boats, of which special mention may be made of the "Sea Eagle" a commercial type seaplane of good performance, and also that since the company has directed its attention almost entirely to the design of large seaplanes for the British and other governments. Notable among recent products is the four engine seaplane which is the world's largest seaplane flying boat. This boat was successfully launched on March 25, 1924, and was followed shortly by the Supermarine Seem which is also an amphibian flying boat designed for landing and reconnaissance work and was supplied to the Spanish Navy, and used successfully in the recent campaigns against the Reds, thus being the first example of the use of the seaplane in active service.

The Supermarine Aviation Works appear at the moment to be busily working with orders placed from various parts of the world including the production for the British Royal Air Force of the Southampton, a twin engine flying boat the details of which are not yet fully available. The first type



The Supermarine "Sea Lion" 450 hp. Navy Sea Scout which was the Schneider Cup for England in 1922 and lost to the U. S. Navy in 1923, when the Cup was last contested.

seaplane that is now being designed for the Schneider Cup contest is an entirely new departure for the Supermarine Works, this company having devoted up to the past eight contests to the production of flying boat types. The arrival of our entry from the other side will therefore be looked forward to with the greatest interest.

### New Orleans—Chicago Air Mail Route

Pettibon (an overnight air mail service between New Orleans and Chicago, with stops at Jackson or Vicksburg, Waco, Memphis and St. Louis, was revived by Postmaster-General.

The route would approximate 1,250 air miles, under the proposed schedule, require the equipment of a lighted airway, and lighted radio beids.

Under the schedule, proposed departure from New Orleans would be made at 7:30 p. m., with a stop at Jackson or Vicksburg about 8:45 p. m., Memphis at 12:24 a. m., and St. Louis at 1:34 a. m., with arrival at Chicago at 7:37 p. m. The scheduled trip would be started from Chicago at 8 p. m., with stops at St. Louis at 11:13 p. m., Memphis at 12:24 a. m., and Jackson or Vicksburg at 1:47 a. m., with arrival at New Orleans at 6:52 a. m.

An airmail service officials are considering the proposed schedule and if the plan is approved both it is expected in early September will be rolled into a new schedule. It is estimated that light airway between New Orleans and Chicago for night flying would cost in the neighborhood of \$250,000.

### Mercuriad Cotton Airplane Cloth, Grade A

Certified No. 275 of the Bureau of Standards under United States Government Master Specification No. 2616 is an improved cotton airplane cloth, Grade A. It gives, in addition to the detailed specifications, methods of test and inspection, the cloth is to have all threads put into both warp and filling, to weigh 4.5 oz. per sq. yd., to be made of No. 90 yarn and to have a weaving strength in both directions 90 lb. per in.

### Chicago Postoffice to Have Landing Platform

It is understood from Postmaster Arthur C. Ladd of Chicago that the plan for the new \$15,000,000 post office will include the installation of a landing platform for mail airplanes. The platform will be two city blocks in length and provide sufficient space for landing the standard types of mail planes now employed. The mail from New York to Chicago would, with the introduction of this platform, be carried by air boat, having the time now taken in transferring the mail from Maywood Field to the city. Congress will be asked to approve the plan should the coming session.

If this plan is carried out it will constitute the first example of a seaplane of long endurance both in this country and abroad, for the carrying of air transport to the very heart of a city and thus eliminating the present very large percentage of total time consumed in handling air traffic at the usual out-of-town terminals.

### An All Metal Airship for the Navy

U. S. Navy and members of the Food Motor Co. in a recent conference with Secretary of the Navy, Miller offered to have the Department design and construct an all-metal, rigid, self-inflating and to incorporate in its construction, the airship, announced on Monday. This offer is now under serious consideration, the Secretary said, by the Bureau of Aeronautics.

The all-metal ship, said to be composed chiefly of duralumin, is a single compartment ship suitable for either day or night operations, having a displacement weight which is fitting gas is contained. This displacement permits the expansion of gas at high levels and is said to ensure a safety factor of at least 100 percent.

The Food Motor company who have been experimenting with the dynamometer for four years, believe the plan thoroughly feasible and practical for naval operations. The ship is said to be about 120 ft. in length and 40 ft. in width, the whole being a single compartment craft. The ship is to be constructed of metal, driven by two engines, it is estimated that the second would be 60 hp. and that the cruising speed would be about 2000 ft. with 4000 ft. with below it would be less.

The weight of the metal motor craft, which is also the present estimate, is designed to be no heavier than the average of the Blériot, the Curtiss, the Curtiss, the Curtiss, and the Curtiss.

The last construction was of about \$100,000 for a single engine of this new type. The ship is intended to be equipped with the latest equipment.

From the technical discussion point, the Navy Secretary Miller, it is felt that the Naval staff was deeply interested in the plan and desired a thorough investigation by the naval engineers. The proposed ship, not only the proposed safety factor, would appear to make far increased use for observation work with the fleet, which the Secretary believes is the only practical value of hydrodynamic craft to the Navy.

### New French Experimental Seaplane

The Potez Co. has recently built for the French navy an experimental type of seaplane which it is claimed is very easy to maintain and is capable of carrying a large crew. The seaplane is 110 ft. long, 40 ft. wide, and has a 1000 hp. engine and is designed for observation and reconnaissance work.

The seaplane is of the biplane type, with 500 sq. ft. of surface, the lower wing resting directly on the floats with a secondary struts and the upper wing making direct contact with the top of the floats. The wings are of the "canted-wing" type with a slight curve. There are only a few ribs and an internal cross wire. The lower struts from the fuselage to the lower wings where they are attached to the floats, which is a single strut, run from the fuselage to the upper wing. The upper wing has a span of 40 ft. 2 in. is quickly detachable so that the plane can be stored on ship board.

The fuselage is made up of two long sections with a central section which facilitates the mounting of the engine. The whole is covered with ply wood. The fuselage is divided into three parts by a central section in which both the engine and the fuselage are mounted. The engine is a 1000 hp. engine, the most powerful of the type, and the engine controls, is detachable by means of a cable. The engine is made of duralumin, and is also detachable.

The tail surfaces are made entirely of plywood. The controls are manipulated through push and pull rods. The pilot is seated in front of the fuselage and while the observer sits behind him. The whole is covered with ply wood. The fuselage is divided into three parts by a central section in which both the engine and the fuselage are mounted. The engine is a 1000 hp. engine, the most powerful of the type, and the engine controls, is detachable by means of a cable. The engine is made of duralumin, and is also detachable.



## Airports and Airways

Cleveland, Ohio  
By Cy Caldwell

The name of Elias has often featured in the *South's* news from Helen of Troy to Helen Merrell Lyden—since how you forget those after they become vice-presidents, isn't it?—and now the name of Helen again maps across a continent in this most national publication with its 37 subscribers, including this list of 23.

Helen F. Cole, young, pretty, blonde-haired, blue-eyed, is Cleveland's first aerial heroine, a girl as pure as the air in its purity. Sentinel beside the pilot in a 1918-type Day-Walker Center carrying two Press photographs to the wreck of the *Stinson*, that first Elias of Ohio noticed the pilot was in difficulties when the plane was over him. He pulled the control stick back and forth—and nothing happened to the airplane. As he kept the plane level with the adjustable stabilizer, he did more high-powered thinking, and devised a tapered pin which was slipped out of the controls at a point behind the ballcock ball, at the rear end. He told the girl of the trouble and indicated how by using wiretags on the floor of the cockpit she could reach through a port in the ballcock, find the pin, and put it back.

The airfield got in cool as an *Edison* P-6, safely landed and did not wobble. She found the pin and held it in place, being strapped on the floor, while the pilot flew to French Field and landed. I mention that a girl like Helen Cole is the answer to the Pilot's Prayer. And I wish I could finish this story in the same concise way in which I tried to write it—like I was an old man and haven't any reason more about the time you help people who are stranded, except pity.

But the end ending is. The pilot who flew that plane was Kenneth H. Cole—*Not* Heland.

There's! Isn't that a peak ending to a good story? Cy Caldwell, U. S. Navy, pilot, and Chalked Dave, his 12 year old passenger, were killed near Cleveland when their plane, an old *Super* 17, crashed, broke up at an altitude of 5,000 ft. According to witnesses Captain Smith had taken the key up to try it flying would save the life of the crew. The plane was seen to dive steeply. After a short descent the wings buckled and rolled up around the fuselage, falling with it, still attached by the wires.

Accidents like this emphasize the need for inspection and licensing of aircraft by competent authorities, because it could happen to any airplane, under any, do not improve with age. We might stop talking about the wonderful future of aviation for just a little while, and devote that time to the proper control of what we have in hand today—and then go on from there. Possibly there might be more of us left to go on with if we did that.

It is worthy of remark that just a week after B-6 had received mention in this column he sold his business to Henry Ford. I suppose Henry heard of him through me, which certainly proves the value of advertising in *Airnews*.

The deal to bring these two men together, for already their association has done a world of good to Henry. His very boy Bill had been back the newspaper and had done what he could to improve his car. Nobody could do much as it is, Henry's plane was in a bad way. Henry turned the matter of gravity, increased the span of the struts, lengthened the fuselage, put the gas tank behind the engine, where it is in most planes. His fuselage, on both open and closed wings, was a steel. In fact, we might just as well call it the *Bomb* air-bomb.

A pilot wants to know what to say to the boss who tells him that he would like to ride "if he could keep his foot on

## ELIAS



THE ELIAS AIR MAIL PLANE TYPE III  
Designed for the Night Mail

## EXCELS IN

Recovery — Balance of Fuel — Rate of Climb —  
Speed — Endurance — Safety in Landing —  
Vision — Simplicity — Quick Turnaround —  
Safety — Economy — Quick Turnaround —  
Safety — Economy — Quick Turnaround —  
Safety — Economy — Quick Turnaround —

533 Miles per Gallon — Range 400 Miles  
Cruising Speed 108 M.P.H.

Standard Cost Components — Standard Tools — Mail  
Features — Standard Tools — Standard Tools —  
Standard Tools — Standard Tools — Standard Tools —  
Standard Tools — Standard Tools — Standard Tools —

Readily Converted for Other Purposes  
WRITE NOW FOR PARTICULARS

G. Elias & Bro., Inc.   
BUFFALO, N. Y.

Seven years devoted exclusively to the largest  
production of commercial aircraft in the U. S.

The New  
SWALLOW

The Aristocrat of the Air

PRICE REDUCTION

Immediate Delivery

5-place OX5 Motor 4-place OX6 Motor  
\$2750. \$3150.

THE SWALLOW AIRPLANE MFG. CO.  
WICHITA, KANS.

ANZANI  
Aircraft Motors

1 CYLINDER 12-12 H.P.

Other Types from 10 to 120 H.P. for  
commercial airplanes.

Wallace Kellett Co., Inc.  
Atlantic Building Philadelphia.

the ground." Don't say anything to him. Just take a heavy motor and drive him out the ground like a tree pig. Don't be rough about it, you know. But make sure he drives in and out of sight.

This fellow and his cousin, who wants to know "if the new power could you come down?" are both undoubtedly possessed. Mad as the wind with the nerve of Mr. James to C. K. Wallin, the famous balloonist and biologist at Goddard, the Madcaps are a tribe of Hottentot business with brains somewhat less developed than that of the owl, whose far-sightedness has caused me to think of them as a tribe to make him to outwit Mr. Scott, who makes the stage and train bus promptly into Scott's business. Professor Wallin says the new Madcaps, as drawn from the dark, more, morning nothing, and the Lake Dale, morning even less. The Madcaps are never without their special apparatus and all about high altitudes. When found, they are drawn down for speaking plentifully with most people.

## Garden City, L. I.

By A. L. Capone

8 E. N. South of New York City and F. L. Rockefeller of New York were down from Garden City, Aug. 22, in an *Osaka* of the *Garrett* Flying Service, Inc., by Arthur L. Capone, Capone pilot, to Lake Placid, N. Y. The flying time was four hours and ten minutes. The passengers are very busy, their families being of the morning must not have been seen. They were well placed with the first time of the air journey which enabled them to spend the week-end with their families, to have their golf and to be at their affairs in time for the opening of the stock market on the following day, Aug. 23. The field at Lake Placid is now in excellent shape.

Preparations for the *Osaka* are going forward rapidly by all who contemplate carrying the various items. An *Osaka* with *Osaka* engine, under-engine *Osaka* has had the various items now being prepared for the commercial service. Henry Rogers put his *Osaka* in the water of the *Osaka* and Barker after a complete rebuilding here in the field. The operations now include the use of four *Osaka* at Lake Placid, N. Y.

Dr. J. J. Ireland's "Comet" equipped with *Osaka* engine and Barker engine is rapidly nearing completion and he expects to enter the field in the near future.

The third *Osaka* which has been finished has been delivered to the field and will be put through its paces by Army pilots in the near future.

Mr. Arthur of the *Osaka* Construction Co., was a recent visitor to the field and from his report, of new larger construction at various points, things seem to be really looking up here in the field.

Earl Sault, American's present pilot, took his first ride in an *Osaka* of the *Osaka* Flying Service, Inc. The *Osaka* has been a complete success with the exception of one thing, it would seem to be to go to and from the mountains to Maryland, Kentucky, and New York, where he lives, instead of by motor car as he formerly did. Some of the first reports of some really worth-while try on the day of Sault's information is worth attention.

The *Osaka* P-11 which was purchased by the *Osaka* Air Line of Detroit is now under the guidance of Eddie Egan from that city. Five passengers and baggage were carried and the pilot reported an uneventful journey all the way round, one was lost but he will be in the air.

The pilot reports along the southern end of Carleton Field in under construction, and while plenty of space is left for the use of the field, it is not yet, pilots are required to look out for the bushes etc.

## New England Notes

By Peter Adams

Lord V. N. Duffin of the Bureau of Aeronautics has been in Boston last Tuesday, leaving the *Osaka* Boston, which was in the hands of R. D. Thomas, executive officer of the *Osaka* Flying Service, Inc. and also brought Thomas in connection with a recent treatment in the Naval Reserve.

The Army at Boston has received two new 25% from the Air Interceptor Depot at Springfield, Ohio. The first was



## "Comet" with OX-5 Motor

Price \$2000.00 f.o.b. Garden City, N. Y.

## GUARANTEED PERFORMANCE

OX-5 Motor	OX-6 Motor
High Speed	112 m.p.h.
Low Speed	40 m.p.h.
Climb rate	1000 ft.
Pay load	300 lb.

The ideal ship to start in Air Mail Feeder Line.  
The strongest ship designed for the OX-5 motor since the Jenny.

G. S. IRELAND

Garden City, N. Y.











# Where to Fly

**ALABAMA**  
**THE EVAN SCHOOL OF AVIATION**  
 O. E. EVAN, Director  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LAUREL AIRPORT SCHOOL OF AVIATION**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**HEATH AIRPLANE COMPANY, Inc.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**PARTRIDGE, Inc.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**CHAS. W. BRYAN SCHOOL OF AVIATION**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**MIDWEST AIRWAYS CORP.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**CARROLL AIRPLANE CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**AVIATION ENGINEERING CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**BURNS-FLYERS**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**SCHOOL OF COMMERCIAL AVIATION**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**F. O. B. & W. AIR SERVICE CO., E. C. Weaver**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**WICHOLAS-BEAGLEY AIRPLANE CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**PORTERFIELD FLYING SCHOOL**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**CURRY FLYING SCHOOL**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**THE SCHOOL OF AVIATION**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**PIREY & WASHINGTON, LONG ISLAND**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**ESSINGTON SCHOOL OF AVIATION**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**CAN YOU FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**COMMERCIAL**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ALABAMA**  
**LEARN TO FLY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

# The Aircraft Service Directory

WHERE TO PROCURE EQUIPMENT AND SERVICES

**HAND FUEL PUMP**  
**PIONEER INSTRUMENT COMPANY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**Photos and Performance**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**ANDERSON AIRCRAFT MFG. CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**MONUMENTAL AIRCRAFT CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**NEW CLEVELAND**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**Airplanes for Sale**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**PARTRIDGE, Inc.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**PARAGON PROPELLERS**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**PARAGON ENGINEERS, Inc.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**HANGARS**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**JOHNSON MOTOR PRODUCTS INC.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**HAMILTON**  
**PROPELLERS FOR OXS T N SCOUTS IN STOCK**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**A FLYING COURSE ON SOUND LINES**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**Gary Flying School**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**FREE**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**QUALITY PRICE SERVICE**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**SOUTHERN AIRWAYS INC.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**WOODSON ENGINEERING CO.**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**NEW HUNTER PROPELLERS**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**TACKER AIRCRAFT COMPANY**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.

**LIBERTY MOTOR OWNERS**  
 1000 N. 10th St., Birmingham, Ala.  
 Offers instruction in flying, engine, and ground school. Also, instruction in flying, engine, and ground school.



# SPEED WITH SAFETY



CURTISS CARRIER PIGEON

## Let the Operator Keep Faith with the Public

The public demand for the transportation of passengers, mails and express matter by the air route places a definite responsibility upon all those who are studying the problem of air operation.

There seems to be no question that companies now organized will receive the sympathetic support of the public in exact proportion to the judgment, experience and honesty which they exercise in their pioneer operations. The greatest care must be used in organizing along practical and conservative lines. The success or failure of this enterprise will depend largely on two factors, personnel and equipment.

**PERSONNEL.** The personnel will be found available among that group of airmen produced by the war who are devoting their lives to the application of aviation to civilian needs.

**EQUIPMENT.** Obviously the Aircraft Operating Companies, not themselves designers or builders, must select their equipment from the best which the aircraft industry can supply.

The Curtiss Aeroplane & Motor Company, the oldest airplane and motor producer in the country, and the organization that has been the creative and productive source of the best military airplanes and motors, has directed its creative energy toward the commercial problem. It was the first company to design, build and test an airplane for the specific requirements of the Air Mail Service. The Curtiss Carrier Pigeon was at once accepted by the Post Office. The expert committee of the National Air Transport, Inc., after a coast-to-coast survey of available equipment, recommended the Curtiss Carrier Pigeon, and the company at once placed an order for a quantity of these machines.

As interchangeability of parts with consequent reduction in cost of maintenance was an important factor in the selection of the Carrier Pigeon by one company, so standardization of airplanes of one type and of one manufacturer by the Post Office and the leading operating companies will make efficient and economical operation possible. The use by all pilots of one type, the standardization of interchangeable spare parts for general distribution from Curtiss stores throughout the country, and the reduced price of planes and parts through centralized quantity production will make the Carrier Pigeon the standard commercial airplane. For "feeder lines" the Curtiss Lark, a smaller prototype of the Pigeon, will shortly be available.

**CURTISS AEROPLANE & MOTOR COMPANY, INC.**  
**GARDEN CITY, N. Y.** **BUFFALO, N. Y.**

**ON TO NEW YORK FOR THE 1925 AIR RACES,**  
**MITCHEL FIELD, L. I. OCTOBER 8TH, 9TH, 10TH; 1925**

